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Theoretical analysis of a fast-axial-flow CO2 laser with the conical discharge tube

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Abstract

A mathematical model of the fast axial flow carbon-dioxide laser (FAFL) with the glow discharge in a conical tube has been developed. The investigations of the dependence of the laser output power on the discharge tube geometry have been carried out. It is shown that the output power and the electrical-to-optical efficiency can be increased due to the conical discharge tube converging along the flow.